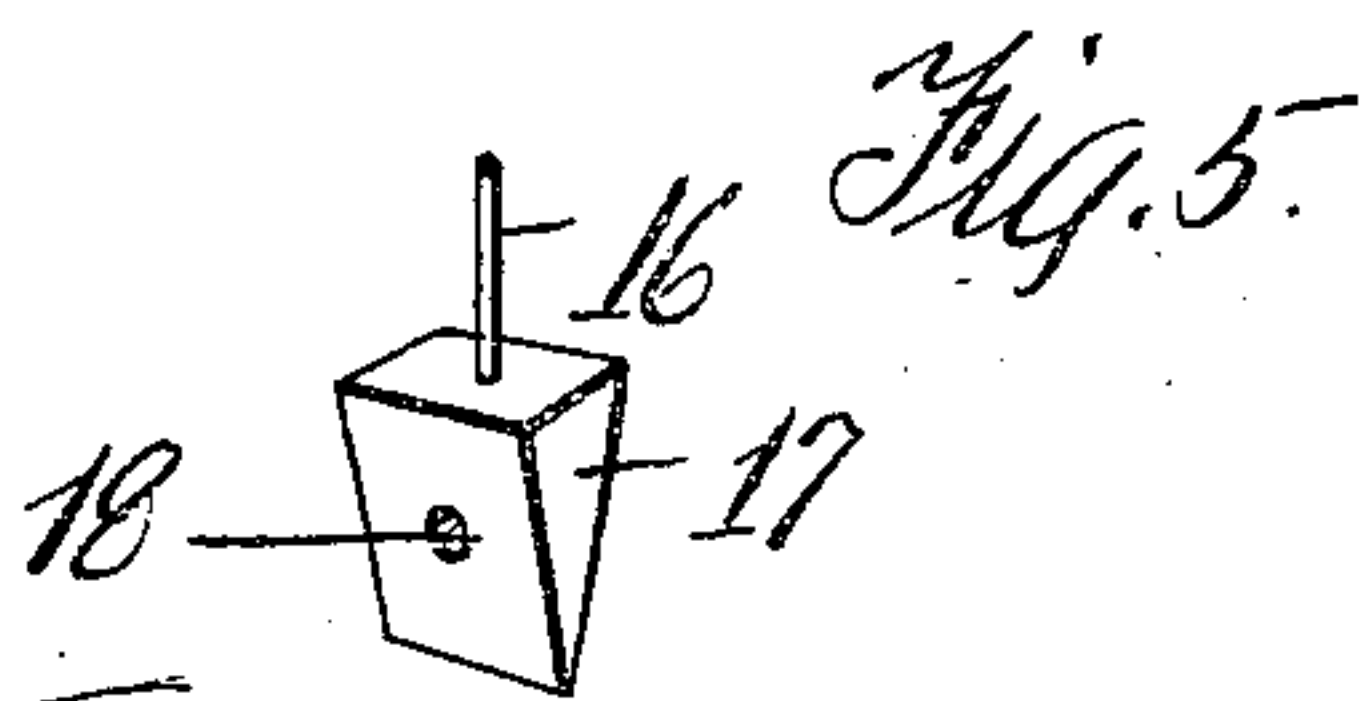
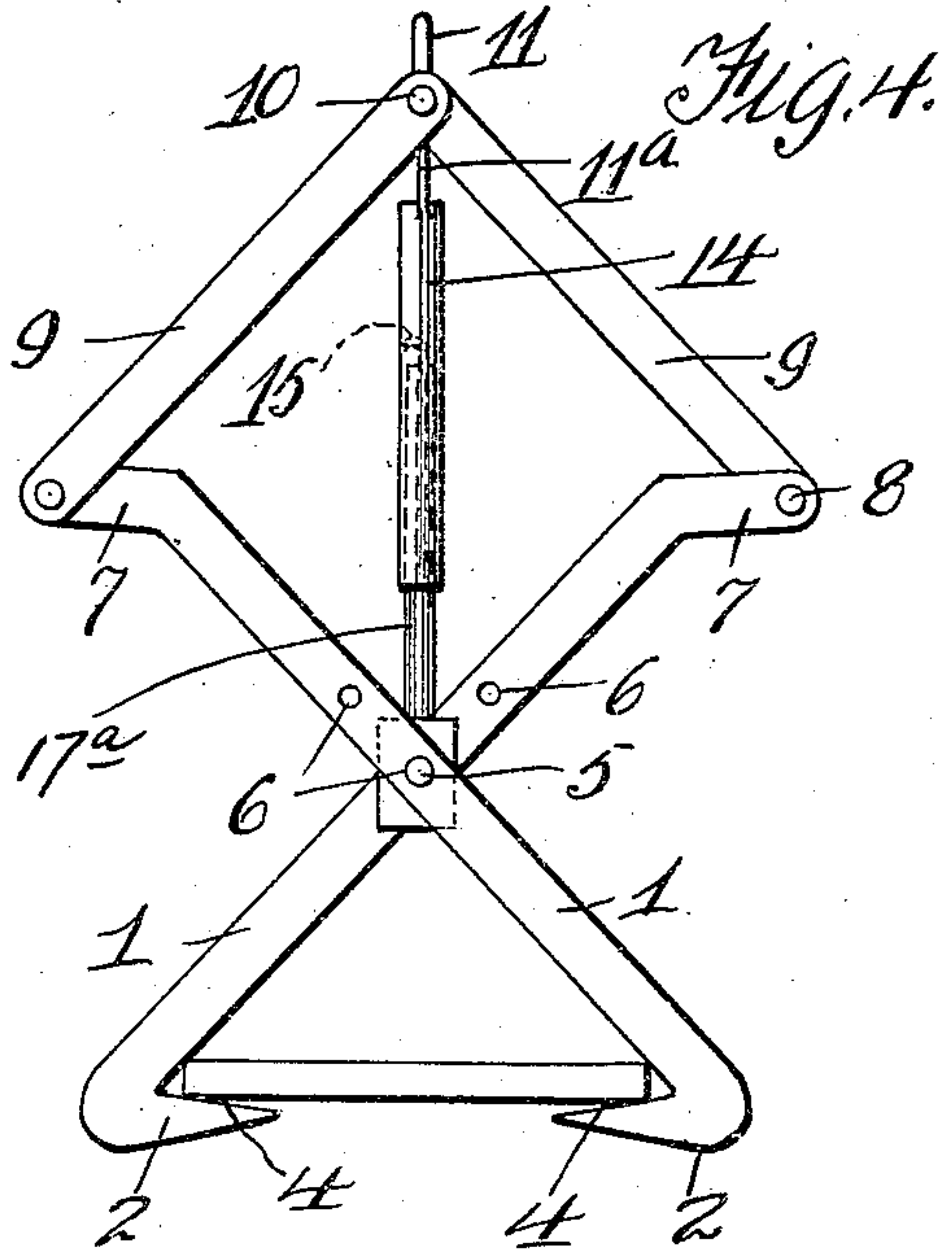
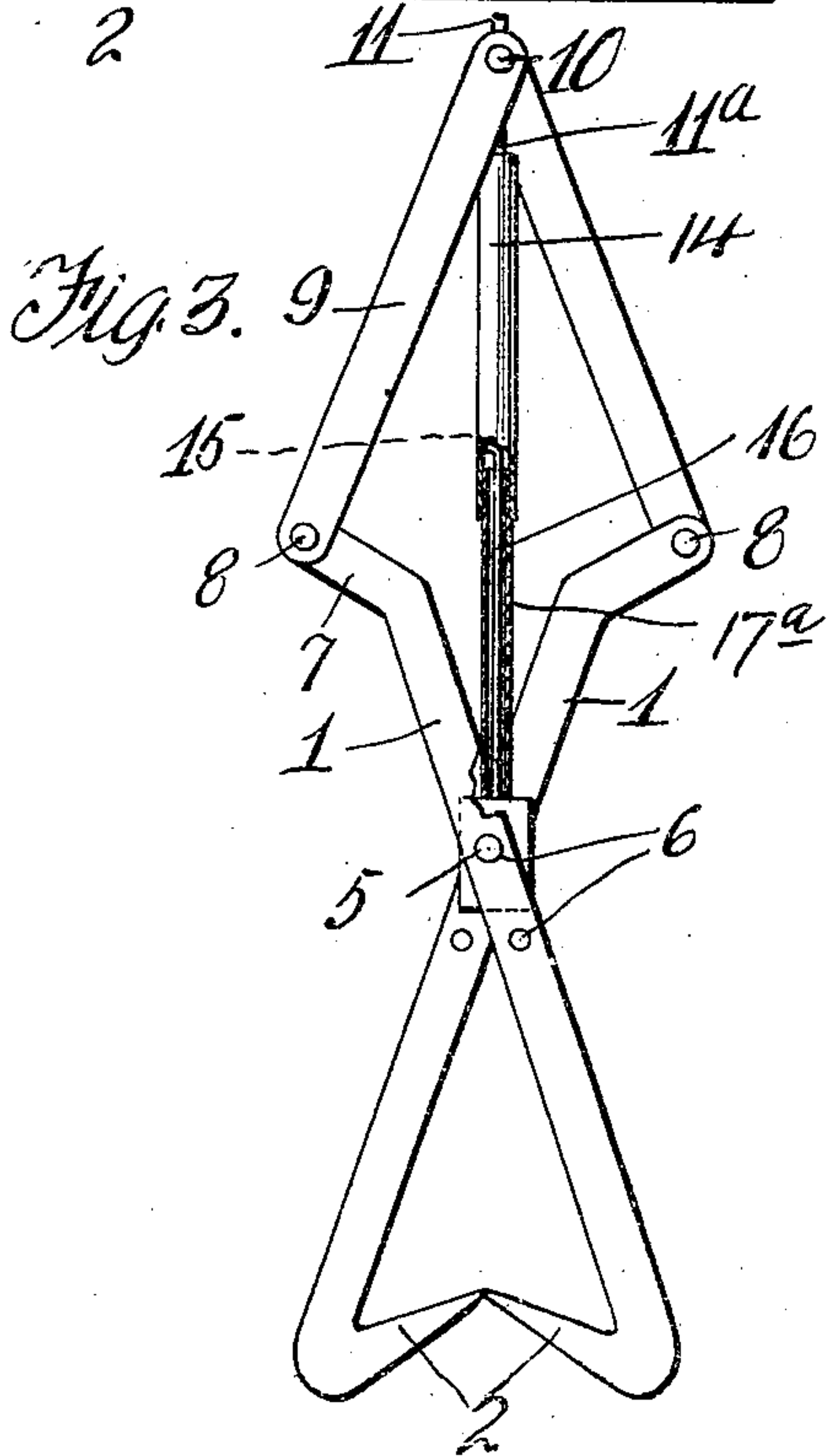
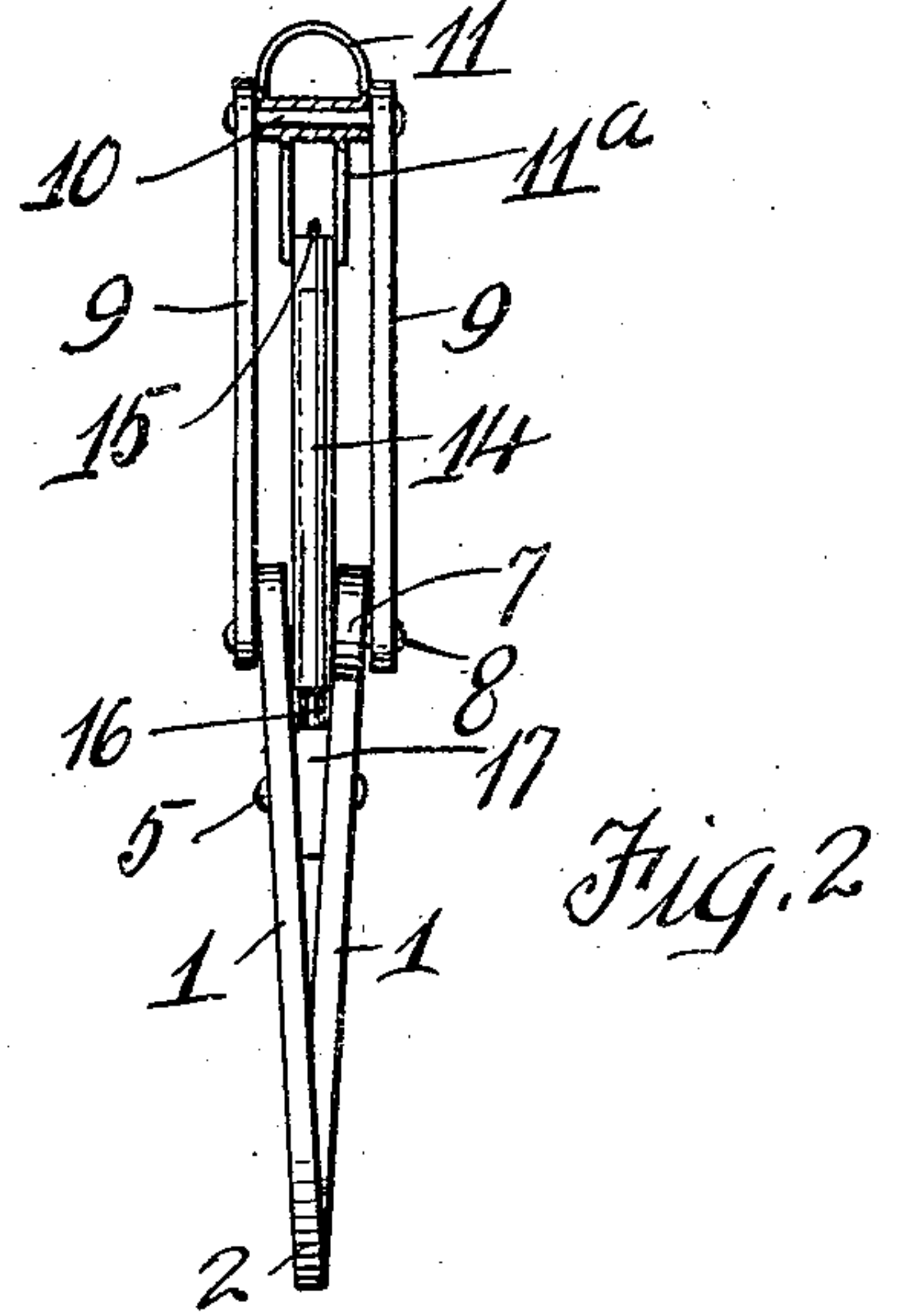
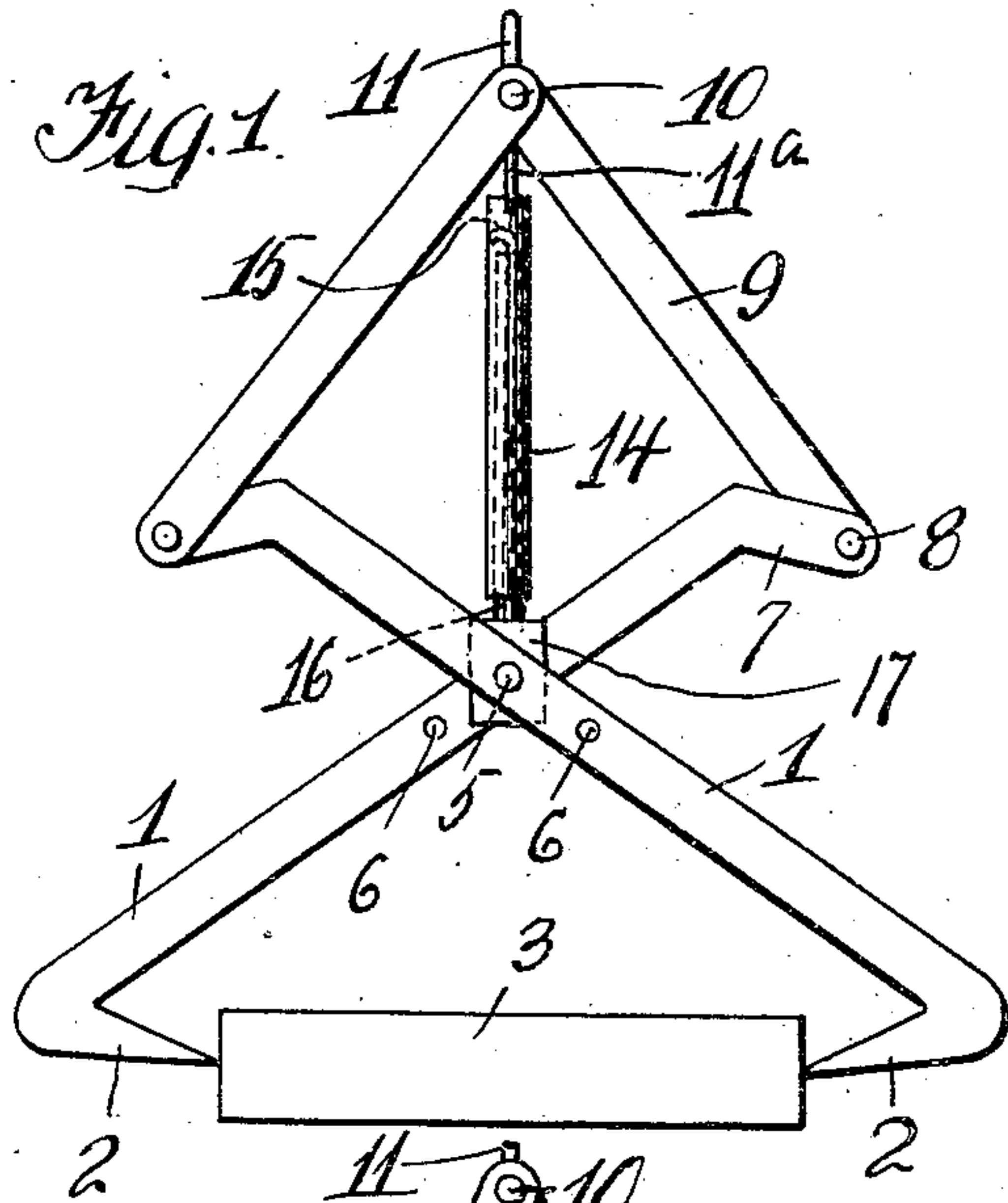


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TONGS.
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958,594.

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WITNESSES

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TONGS.

958,594.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VINCENT D. CARROLL, a citizen of the United States of America, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Tongs, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to tongs or lifting appliances for handling billets, blooms and slabs of iron or steel and is adapted to handling such material as handled by the aid of a crane, derrick or hoisting apparatus.

The primary object of my invention is to provide tongs for handling metal that can be adjusted to grip billets, blooms or slabs of all dimensions, whereby when the tongs are elevated the piece of metal will be safely carried thereby.

Another object of the invention is to provide a pair of tongs that will automatically open and grip a piece of metal without the services of a workman to aid the gripping or releasing of the piece of metal to be moved.

A still further object of the invention is to provide a grapple or hook that can be used for various purposes, and to dispense with the various sizes of tongs now in use.

A still further object of the invention is to accomplish the above results by a grapple that is simple in construction, durable, positive in its action, free from danger by ordinary use and highly efficient as a gripping device.

In the drawing:—Figure 1 is a front elevation of a pair of tongs constructed in accordance with my invention, Fig. 2 is a side elevation of the same, Fig. 3 is a front elevation of the same device in another position from that shown in Fig. 1 of the drawing, Fig. 4 is a side elevation of the tongs adjusted to grip a small piece of material, and Fig. 5 is a perspective view of a wedge shaped member adapted to form part of the tongs.

A pair of tongs constructed in accordance with this invention consists of levers 1 having the lower ends thereof provided with inwardly projecting self-adjusting gripping prongs 2 adapted to directly grip the sides of a piece of material 3, or engage a piece of material, as designated 4. The levers 1 are pivotally connected by a bolt, pin or rivet 5 adapted to extend through openings 6 provided therefor in the levers

1. A plurality of the openings are provided, whereby the levers 1 can be adjusted to increase their general usefulness in gripping thick or thin slabs, billets or blooms. The upper ends of the levers 1 are provided with extensions 7 and pivotally connected to said extensions, as at 8 are arms 9, said arms having the upper end thereof pivotally connected by a bolt, pin or rivet 10. Mounted upon the bolt 10 is a stirrup 11 adapted to be connected to a crane, derrick or similar hoisting device, but this stirrup may be shaped to form a handle particularly when the tongs are made upon a small scale and manually used.

The stirrup 11 is provided with depending arms 11^a having the lower ends thereof connected to the upper end of a vertical sleeve 14. Adapted to extend upwardly through the sleeve 14 and engage the upper edge thereof is the hook-shaped end 15 of a rod 16, the lower ends of said rod being mounted in a wedge shaped member 17. This member is provided with a transverse opening 18 adapted to receive the pivot pin 5 of the levers 1. The wedge shaped member 17 is arranged between the pivoted levers and the object of this member is twofold. First, the member retains the lower ends of the levers 1 opposite one another with the remainder of the levers out of parallelism. Second, this member through the medium of the rod 16 and the sleeve 14 is adapted to lock the levers in an open position. In order that this can be more fully understood, I will assume that the levers are fully open and the operator of the crane or derrick wishes to grip a slab or piece of material. It is then only necessary for the operator to lower the grapple until the prongs are farther separated, and such an adjustment of the prongs moves the wedge shaped member 17 in close proximity to the lower end of the sleeve 14, causing the hook-shaped end of the rod 16 to project above the sleeve. The operator of the crane or hoisting device can then raise the grapple and in the majority of instances the hook-shaped end of the rod 16 will pass into the sleeve and allow the prongs 2 of the levers to grip the piece of material. The operator of the crane or derrick can observe the direction in which the hook-shaped end of the rod 16 is pointed, and by moving the crane or hoisting device slightly in an opposite direction, the sleeve 14 which is station-

any relative to the stirrup 11 will be moved relative to the rod 16 and provide sufficient clearance for the hook-shaped end of the rod to pass through the sleeve 14. When the operator desires to lock the levers in an open position, the grapple is lowered until the hook-shaped end projects above the sleeve, and then by moving the crane or hoisting device the sleeve will be swung into engagement with the rod and by hoisting the grapple, the sleeve will be brought into engagement with the hook-shaped end of the rod and the levers will be held in an open position.

The upper end of the wedge-shaped member 17 is provided with a vertical sleeve 17^a adapted to extend into the sleeve 14 and protect the rod 16 and prevent said rod from becoming accidentally disengaged with the sleeve 14.

Having now described my invention what I claim as new, is:—

1. A grapple comprising levers, gripping prongs carried by the lower ends of said levers, a pin pivotally connecting said levers, arms pivotally connected to the upper ends of said levers, a pin connecting the upper ends of said arms, and a wedge shaped member arranged between said levers, said member having an opening formed therein adapted to provide clearance for the pivot pin of said levers, substantially as, and for the purpose herein described.

2. A grapple comprising levers, gripping prongs carried by the lower ends of said levers, pivoted arms connected to the upper

ends of said levers, a pin pivotally connecting said levers, a wedge shaped member suspended from the upper ends of said arms between said levers and adapted to normally retain said gripping prongs oppositely disposed.

3. A grapple comprising pivoted levers, gripping prongs carried by the lower ends of said levers, arms pivotally connected to the upper ends of said levers, a pin pivotally connecting the upper ends of said arms together, a sleeve suspended from the upper ends of said levers, a pin pivotally connecting said levers, and a wedge shaped member mounted upon said pin between said levers and adapted to be suspended from said sleeve, substantially as described.

4. A grapple comprising pivoted levers, gripping prongs carried by the lower ends of said levers, arms pivotally connected to the upper ends of said levers, a stirrup connecting the upper ends of said arms, a vertical sleeve carried by said stirrup, a wedge shaped member arranged between said levers at the pivot point thereof, and a rod connecting with said member and extending upwardly into said sleeve, said rod having a hook-shaped end adapted to engage the upper edge of said sleeve.

In testimony whereof I affix my signature in the presence of two witnesses.

VINCENT D. CARROLL.

Witnesses:

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